Nib Removal Sander 3125
Owner's manual

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a. SAFETY INFORMATION

Please read, understand, and follow all safety information contained in these instructions prior to the use of this tool. Retain these instructions for future reference.

Intended Use:

This tool is designed for repairing painted automobile bodies and parts as well as FRP (Fiber Reinforced Plastic) and wood. It should not be operated in water or in an excessive wet application. All users should review this document and be trained in the safe use of this tool.

Explanation of Signal Word Consequences

⚠ **WARNING:**	Indicates a potentially hazardous situation which, if not avoided, may result in death or serious injury and/or property damage.
⚠ **CAUTION:**	Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury and/or property damage.

⚠ WARNING

- **To reduce the risks associated with pressure, noise, vibration, and tool malfunction during the use of this product:**
  - Read and follow the safety information contained in these instructions prior to the use of this tool. Retain these instructions for future reference.
  - Never exceed maximum input pressure of 95psi (0.65 MPa).
  - Always wear protection for eyes and ears while operating this product.
  - Never point this tool in the direction of your body or that of another person.
  - Never free-spin the tool.
  - If you notice any abnormal noise or vibration when operating the product, immediately discontinue its use and return to the manufacturer for service or repair. Refer to warranty instructions.
  - Limit time of continuous use of tool to 30 minute increments.
  - Discontinue use of the tool if abnormal hand/wrist discomfort is experienced.

⚠ CAUTION

- **To reduce risk of skin abrasion, do not touch the rotating parts during operation for any reason**

Read the
Material Safety Data Sheets (MSDS)
before using any materials.
MSDS
Contact the suppliers of the workpiece materials and abrasive materials for copies of the MSDS if one is not readily available.
WARNING
Exposure to DUST generated from workpiece and/or abrasive materials can result in lung damage and/or other physical injury.
Use dust capture or local exhaust as stated in the MSDS. Wear government-approved respiratory protection and eye and skin protection.
Failure to follow this warning can result in serious lung damage and/or physical injury.

Improper use can cause this tool to break apart and may cause injury to operators and bystanders. **

* For eye and face protection, see ANSI standard Z87.1

** For further information on coated abrasive products, consult ANSI standard B7.7, "Safety Requirement for Abrading Material with Coated Abrasive Systems" Both are available from American Standard Institute, Inc., (212)642-4900

SPECIFICATION

Motor RPM	Orbit Dia.	Air flow	Air Pressure	Weight	Pad Size
7,500	0.118 inch (3 mm)	5.3 SFM (150 LPM)	58. 5 - 95.0 PSI (0.40 - 0.65 Mpa)	1.06 pounds (0.48 kg)	1.18 inch (30 mm)

HOW TO HANDLE

- This tool is designed for repairing painted automobile bodies and parts as well as FRP (Fiber Reinforced Plastic) and wood. It should not be operated in water or in an excessive wet application.
- Check for loose screws and missing parts before operation.
- Connect air hoses after cleaning connecting part to reduce contamination from foreign objects, dust, sand, etc.
- During inspection of each part make sure to detach air hoses.
- When connecting air hoses with an air tool, do not squeeze the trigger.
- Do not throw the tool.
- Do not drag the tool while holding the air hose.
- Do not use the tool in a non-recommended application.
- Operation without lubricants will cause rapid wear on the motor and can lead to rotation failure.
- Prior to storing lubricate the tools at a low speed to spread oil inside the motor.
- Select a dry and safe place for storage.
- Frequent cleaning of air connections will reduce contamination of the motor.
- Abnormal noise or vibration during operation indicates an immediate need for tool repair.
- If repair is necessary notify sales office or repair center from where you purchased this tool regarding inspection and repair.
- Use only 3M-recommended replacement parts.

PRIOR TO THE OPERATION

- Keep the work area clean, orderly and free of obstacles.
- Inspect for loose parts (tool and attachment) prior to operation.
- Confirm that air pressure supply is at recommended pressure (95psi/0.65 MPa).
- When connecting to an air hose ensure a secure connection that will not loosen during operation.
- Center the abrasive on the backup pad.
- Press the abrasive securely into place.

START AND STOP

- Place the tool in contact with the work piece.
- Start the tool by pressing the lever/trigger lightly.
- Start the tool on the polishing plain during work.
- Slow the tool down before removing from the work piece.
- Remove tool at a 90 degree angle from the work piece.
- Detach air hose when the tool is not in use.
- Detach the tool from the air source when transporting.

DURING OPERATION

- Speed can be adjusted from low to high with the speed controller knob. Adjust the speed in accordance to the work being done.
- Do not apply excessive force to the tool. Excessive force can lead to inefficient tool performance and decrease tool life.

Product Use: All statements, technical information and recommendations contained in this document are based upon tests or experience that 3M believes are reliable. However, many factors beyond 3M's control can affect the use and performance of a 3M product in a particular application, including the conditions under which the 3M product is used and the time and environmental conditions in which the product is expected to perform. Since these factors are uniquely within the user's knowledge and control, it is essential that the user evaluate the 3M product to determine whether it is fit for a particular purpose and suitable for the user's method of application.

Warranty and Limited Remedy: Unless stated otherwise in 3M's product literature, packaging inserts or product packaging for individual products, 3M warrants that each 3M product meets the applicable specifications at the time 3M ships the product. Individual products may have additional or different warranties as stated on product literature, package inserts or product packages. 3M MAKES NO OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR ANY IMPLIED WARRANTY ARISING OUT OF A COURSE OF DEALING, CUSTOM OR USAGE OF TRADE. User is responsible for determining whether the 3M product is fit for a particular purpose and suitable for user's application. If the 3M product is defective within the warranty period, your exclusive remedy and 3M's and seller's sole obligation will be, at 3M's option, to repair or replace the product or refund the purchase price. **Limitation of Liability:** Except where prohibited by law, 3M and seller will not be liable for any loss or damage arising from the 3M product, whether direct, indirect, special, incidental or consequential, regardless of the legal theory asserted, including warranty, contract, negligence or strict liability.

Submitting a Warranty Claim

Contact your dealer when submitting a warranty claim in accordance with the restrictions listed above. Please note that all warranty claims are subject to manufacturer's approval. Be sure to keep your sales receipt and Product Inspection Certificate in a safe place. These must be submitted when filing a warranty claim, within 90 days from the date of purchase.

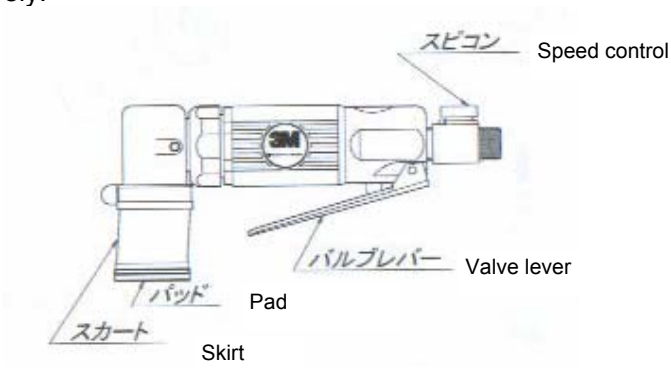
Product Repair after Warranty Has Expired

3M does not offer repair service for product out of warranty. Please contact your dealer for the repair parts listing. For further technical information, visit: http://solutions.3m.com/en_US/Products/ and go to Abrasives & Sandpaper link and follow the instructions.

b. OPERATING INSTRUCTION

At work

- Check to see that the workplace is in order and is appropriate for the work.
- Inspect for loose parts.
- Confirm the proper air pressure (0.4 to 0.65 MPa)
- Tighten all couplings securely so that they will not be loosened by vibration.
- Attach buffing material or paper by pressing it uniformly with the palm of hand to attach it securely.

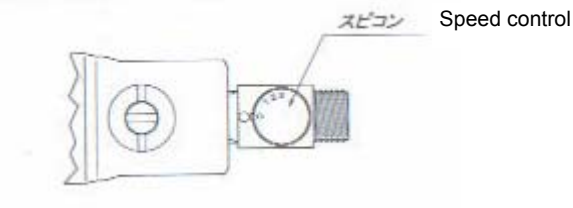


Starting and stopping

- The tool starts when the valve lever is pressed lightly. It stops when the lever is released.
- Operate the lever as the abrasive contacts the surface to be polished. When the tool is transported, be sure to remove the air hose.

During use

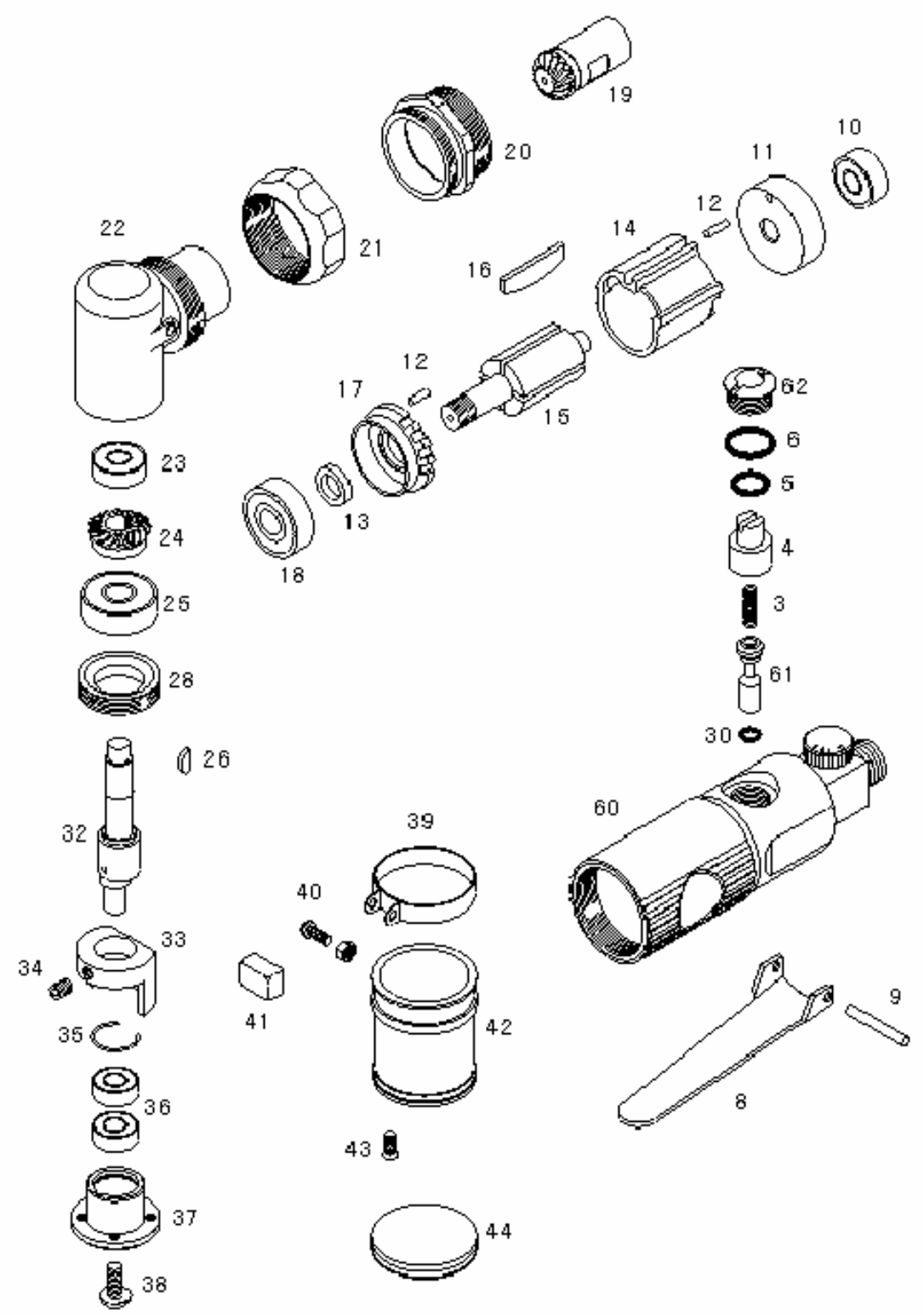
- The tool can be adjusted continuously from low to high speed by the speed control. Adjust it according to the work.
- Do not press it onto the surface to be polished with excess force. This does not increase efficiency, but it shortens tool life.



After use

- ·Apply spindle oil to the air supply opening and operate the tool at low speed. After use, be sure to remove the air hose and store the tool in a safe, dry place.

c. Spare Parts information



c. Spare Parts information - continued

PARTS No.	CODE	ITEM	QTY.
3	S3305	Spring	1
4	S3322	Air Regulator	1
5	S3323	O-Ring (P-7)	1
6	P101	O-Ring (P-10A)	1
8	S3401	Throttle Lever	1
9	S3402	Roll Pin	1
10	696ZZ	Bearing (696ZZ)	1
11	S3326	Rear End Plate	1
12	S3411	Roll Pin	2
13	S3333	Rotor Collar	1
14	60743	Cylinder	1
15	S3329	Rotor	1
16	S3212	Rotor Blade	4
17	S3424	Front End Plate	1
18	608ZZ	Bearing (608ZZ)	1
19	S3217	Pinion	1
20	S3215	Cup Lock	1
21	S3119	Cup	1
22	S3118	Angle Housing	1
23	696ZZ	Bearing (696ZZ)	1
24	S3336	Gear	1
25	608ZZ	Bearing (608ZZ)	1
26	S3338	H/R Key (φ8x1.5)	1
28	S3340	Clamp Nut	1
30	S3321	O-Ring (P-4)	1
32	60730	EX.Shaft	1
33	60731	Balancer	1
34	171408	Set Screw (M4x8)	1
35	60737	Snap Ring	1
36	686ZZ	Bearing (686ZZ)	2
37	60732	Shoe Bearing Case	1
38	150406	Screw (M4x6)	1
39	60736	Skirt Band	1
40	110310A	Screw Set	1Set
40-1	110310	Screw (M3x10)	(1)
40-2	2103	Nut (M3)	(1)
41	60739	Cap	1
42	60733A	Skirt	1
43	130305	Screw (M3x5)	4
44	*	Disc Pad	
45	607381	Regulator (φ1.6)	1
60	60740	Housing	1
61	60741	Throttle Valve	1
62	60742	Valve Plug	1

*Available in 3M: Disc Pad Soft (UPC 051111-60537-0)
Disc Pad Hard (UPC 051111-20207-5)

Special tools for the repair operation – see Page 10

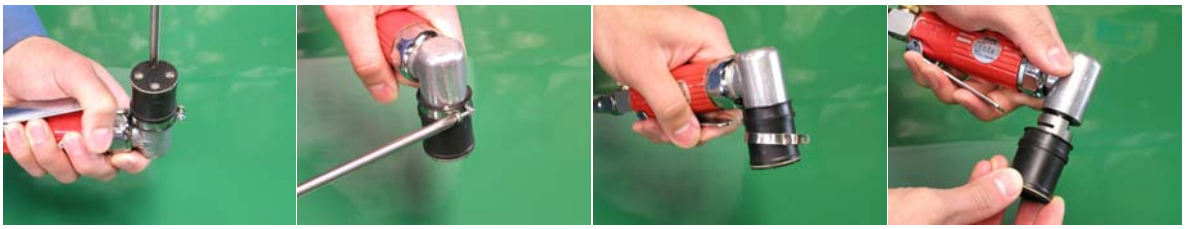
PARTS No.	CODE	ITEM	QTY.
1)	ST041	Clamp nut wrench	1
2)	ST501	Bearing puller	1
3)	ST028	Air motor disassembly punch	1
4)	ST015	Needle punch	1
5)	ST039	F. R. bearing case puller stand	1
6)	ST040	Bearing puller stand	1
7)	ST018	626 bearing punch	1
8)	ST017	608 bearing punch	1
9)	ST007	3mm pin punch	1

d. Disassembly method

⚠ CAUTION

Disconnect air hose first. Disassembling the tool without disconnecting air hose is very dangerous.

1. Remove the skirt



- Remove four screws (43) from skirt (42) Hook-it side.
- Remove the screw (40) from the skirt clamp (39) and remove the skirt band.
- Remove the skirt (42).

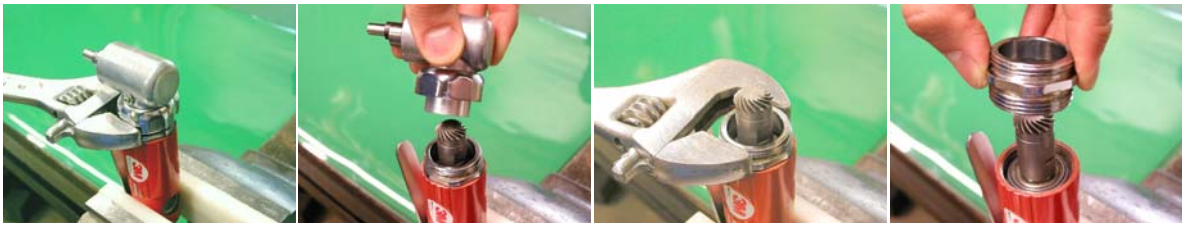
2. Remove pad holder.

- Remove the thrust screw (38) and remove the case assembly (35-37).

3. Remove balancer

- Remove set screw (34) which holds balancer (33) and remove balancer.

4. Remove parts from housing



- Place housing (60) in a vise and rotate cup (21) counterclockwise and remove the angle housing assembly (22-32).
- Rotate the cup lock (20) counterclockwise and remove it.

5. Remove motor

- Remove motor assembly (10-19).
- Drive out rear bearing (11) using special tool and a hammer.
- Remove rear end plate. Drive out bearing (10) using special tool.

- Remove the cylinder (14).
- Remove the vanes (16).
- Hold the rotor (15) carefully. Rotate the pinion (19) counterclockwise and remove.

- Use a plastic hammer to strike the rotor axle (15).
- Remove the rotor from the front end plate.
- Remove the rotor collar (13).
- Drive out the bearing (18) from the front end plate (17) using the special tool.

6. Disassemble the angle housing

- Clamp the angle housing assembly (22-32) in a vise. Rotate clamp nut (28) clockwise and remove.
- Remove EX shaft assembly (32, 23-26) and remove cup (21).

- Use gear puller to remove gear (24) in the EX shaft assembly (32, 23-26) and remove gear.
- Remove the half-moon key. Use gear puller on bearing (25) and remove.

7. Disassemble case

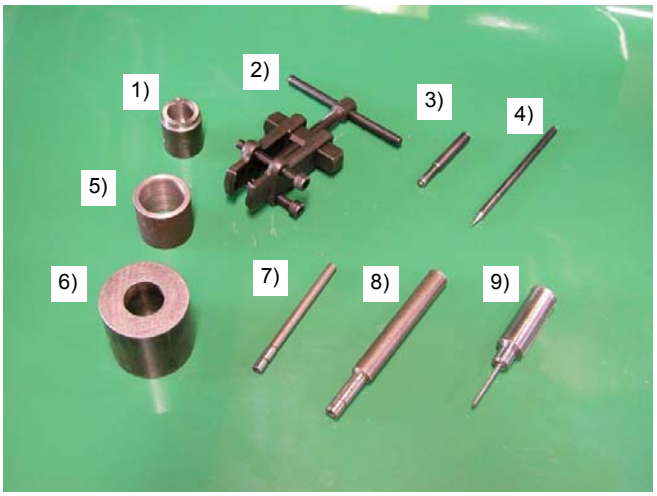
- Remove snap ring (35) and remove bearing (36) using special tool.

8. Valve disassembly

- Remove plug (62). Remove regulator (4) and o-ring (5). Remove o-ring (6) from valve plug (62). Remove valve assembly (3,2,30).

- Remove spring (3) and 0-ring (30) from valve assembly.
- Remove throttle valve (61).

9. Special tools for the repair operation (to help the disassembly)



From top left :

1) ST041 Clamp nut wrench
2) ST501 Bearing puller
3) ST028 Air motor disassembly punch
4) ST015 Needle punch

Middle row:

5) ST039 F. R. bearing case puller stand

Bottom row:

6) ST040 Bearing puller stand
7) ST018 626 bearing punch
8) ST017 608 bearing punch
9) ST007 3mm pin punch3125 clamp nut tool - (see Page 5)

e. Guideline for parts exchange

Parts no.	Figure no. (ID number)	Part name	Qty	Guideline for parts exchange
3	3305	Spring	1	When bent or damaged, or when it doesn't work properly
4	3322	Air regulator	1	
5	3323	O ring (p-7)	2	When damaged
6	3501	O ring (P-10A)	1	When damaged
8	3401	Throttle lever	1	When deep wear marks occur in the part that contacts the valve pin
9	3402	Roll pin	1	Lever hinge is worn badly
10	3465	Ball bearing (696ZZ)	1	Ball is worn and gap becomes big, or is locked up
11	3326	Rear end plate	1	When bearing is loose or when other dangerous deformation is seen. If the marks made by the rotor are not bad, it can be repaired with paper wrap.
12	3411	Roll pin	2	
13	3333	Rotor collar	1	
14	3210	Cylinder	1	When internal scratches cannot be repaired.
15	3329	Rotor	1	When the vane groove is worn
16	3212	Rotor blade	4	When the width is −0.5 less than the original size (7), or when the length becomes −0.25 less than the original size (25.4)
17	3424	Front end plate	1	When the bearing joint is loose or when other dangerous damage is seen. If the marks made by the rotor are not bad, it can be repaired with paper wrap.
18	3464	Ball bearing (608Z)	1	1) When the ball bearing is worn or seized up. 2) There is too much play.
19	3217	Pinion	1	When the gear is damaged or heavily worn
20	3215	Cup lock	1	
21	3119	Cup	1	
22	3118	Angle housing	1	
23	3466	Ball bearing (696ZZ)	1	1) When the ball bearing is worn or seized up. 2) There is too much play.
24	3336	Gear	1	
25	3464	Ball bearing (608Z)	1	1) When the ball bearing is worn or seized up. 2) There is too much play.
26	3338	Half moon key (1.5 x 8)	1	
28	3340	Clamp nut	1	
30	3321	O ring (P-4)	1	When damaged or it won't seal
32	60730	EX shaft	1	When the bearing juncture is loose
33	60731	Balancer	1	
34	170408	Stopper screw with hexagonal hole (M4 x 8, tip of bar)	1	
35	60737	Snap ring	1	When bent or severely deformed
36	686ZZ	Bearing (686ZZ)	2	When the balls are worn and there is too much play or the bearing is or locked up
37	60732	Shoe bearing case	1	When the bearing is loose or deformed.

Parts no.	Figure no. (ID number)	Part name	Qty	Guideline for parts exchange
38	150406	Tras bis (M4 x 6)	1	
39	60736	Skirt band	1	When the deformed or damage is found.
40-1	110310	Screw (M3 x 10)	(1)	
40-2	2103	Nut (M3)	(1)	
41		Cap	1	
42	60733	Skirt	1	When cut or cracked or worn-out.
43	130305	Screw (M3 x 5)	4	
44	60735	ϕ30 x 4t pad	1	When surface flatness is lost
45	60738	Speed controller (exclusive product)	1	When parts become worn such as the inlet screws
60	60740	Housing	1	
61	60741	Throttle Valve	1	When outer diameter is worn and air leaks seriously from the valve pin sleeve joint
62	60742	Valve Plug	1	

f. Assembly method

- Before assembly, clean each part and check for wear or damage. Use only proper spare parts.
- Apply lubricant oil lightly on each part.
- Replace damaged O rings. Install O rings using grease (multipurpose grease - Military Specifications G-46006, or equivalents).
- Assemble the parts carefully in reverse order from disassembly.
- Carefully confirm end clearance in the motor.
- Do not over-tighten the cup lock.
- When installing the angle housing, install the cap in the end of the angle housing beforehand. Tighten the cup lock while confirming the position of the angle housing.
- Install the EX, shaft Assy., while confirming proper meshing of the gears. Never assemble the gears to hit tooth to tooth.
- After assembly, look for loose or missing screws.
- Apply lubricant oil into the air inlet, and run the tool at a medium pressure to make sure it rotates freely.

Repair services after Warranty period & Parts supply contact

Tool Warehouse Inc.
Contact: Jeff Houk
3410 East 42nd Street,
Minneapolis, MN 55406-3333
Phone: 1-612-722-4260 Fax: 1-612-722-3415
e-mail: sales@ToolWarehouseInc.com

3M Industrial Business Quality Direct / abrasives
Phone: 1-800-362-3550 (USA only)

3M Industrial Business Customer Response Center
900 Bush Avenue, Building 21-1W-10
St. Paul, MN 55106
Phone: 1-866-279-1235
www.3M.com/abrasives

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Trouble shooting Chart

No run	No sound	Regulator problem or constricted airline	Check Regulator
	Sound Air motor rotates (manually)	Vane stuck because of dirt or oil	If it won't rotate manually, service is required
	Won't rotate	Motor is locked up, because of dirt	It is required overhaul
Rotates	Rotates without throttle lever	Valve is dirty	Press lever repeatedly
		Deffected valve	Replace valve or valve seat (O-ring)
		O-ring is damaged	Replace O-ring
	Loaded Won't rotate	Dirt in air motor	Overhaul
		Overloading	Reduce load
		Bearings are damaged	Replace bearing
	Low RPM	Dirt in air motor	Lubricate, disassemble and clean
		Overloading	Reduce load
		Vane is worn-out	Replace the vane
		Low air pressure	Air compressor's capacity is too small
		Air leak	Tighten the connectors
	Excessive vibration	Excess air pressure	Reduce air pressure
		Parts are worn-out or damaged	Replace worn-out or damaged parts
		Pad is damaged	Replace the pad
		Boot is damaged	Replace the boot
	Excessive noise High frequency	Bearings are damaged	Replace the bearing
		Muffler is damaged or choked	Replace or repair the muffler
		Too much backlash in gears	Ajust or replace the gears
		Balancer is defect	Replace the barancer
	Groam noize	Mechanical interference in motor	Overhaul
		The balancer screw is loose	Tighten balancer
	Shutting up	Vanes are stacking	Lubricate freely
	Starting is unstable	Mechanical interference in motor	Overhaul
		Balancer is defect	Tighten balancer